

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A device for detection of magnetic permeability μ or, alternatively, relative magnetic permeability μ_r or, alternatively, relative magnetic susceptibility ($\mu_r - 1$) of a sample, wherein said device contains a sample chamber and at least two coils, one coil surrounding said sample chamber and one coil placed so as to be in thermal contact by being physically connected to the material which constitutes the sample chamber, but without surrounding the cavity of the sample chamber, ~~said two coils surrounding said sample chamber and~~ said sample chamber having at least one opening for introduction of a sample or a sample container holding a sample, said device also provided with an electronic circuit which measures the difference in inductance between the two coils.

2. (Previously Presented) A device as claimed in claim 1, wherein each of said coils, when filled with air, has an inductance in the range of 0.01 to 100 μH .

3. (Previously Presented) A device as claimed in claim 1, wherein said sample chamber has a chamber volume in the range of 0.1 to 5000 μl .

4. (Canceled)

5. (Previously Presented) A device as claimed in claim 1, wherein the material of which the sample chamber is made is a polymer, wood, glass, or a metal with $0.999 < \mu_r > 1.001$.

6. (Previously Presented) A device as claimed in claim 1, wherein it is provided with an electronic circuit whose output signal is proportional to the difference in inductance between said coils and to the relative magnetic permeability of the sample material placed in one of the coils, which is in the range of $0.0000001 < \mu_r < 10$.

7. (Previously Presented) A device as claimed in claim 6, wherein said electronic circuit is formed such that said coils are part of an alternating current bridge.

8. (Previously Presented) A process for interaction with magnetic markers, for detection of chemical substances with $\mu_r = 1$, comprising the utilization of the device of claim 1.

9. (Previously Presented) A device as claimed in claim 2, wherein said sample chamber has a chamber volume in the range of 0.1 to 5000 μl .

10-12. (Canceled)

13. (Previously Presented) A device as claimed in claim 2, wherein the material of which the sample chamber is made is a polymer, wood, glass, or a metal with $0.999 < \mu_r > 1.001$.

14. (Previously Presented) A device as claimed in claim 3, wherein the material of which the sample chamber is made is a polymer, wood, glass, or a metal with $0.999 < \mu_r > 1.001$.

15. (Canceled)

16. (Previously Presented) A device as claimed in claim 2, wherein it is provided with an electronic circuit whose output signal is proportional to the difference in inductance between said coils and to the relative magnetic permeability of the sample material placed in one of the coils, which is in the range of $0.0000001 < \mu_r < 10$.

17. (Previously Presented) A device as claimed in claim 3, wherein it is provided with an electronic circuit whose output signal is proportional to the difference in inductance between said coils and to the relative magnetic permeability of the sample material placed in one of the coils, which is in the range of $0.0000001 < \mu_r < 10$.

18. (Canceled)

19. (Previously Presented) A device as claimed in claim 5, wherein it is provided with an electronic circuit whose output signal is proportional to the difference in inductance between said coils and to the relative magnetic permeability of the sample material placed in one of the coils, which is in the range of $0.0000001 < \mu_r < 10$.

20. (Previously Presented) A process for interaction with magnetic markers, for detection of chemical substances with $\mu_r = 1$, comprising the utilization of the device of claim 2 to detect chemical substances selected from the group consisting of proteins, hormones, complement factors, bacteria, cells, viruses, fungi, yeast, spores, phages, cells, cell organelles, DNA, and RNA.

21. (Currently Amended) A device as claimed in claim 5, wherein the polymer material of which the sample chamber is made is selected from the group consisting of ~~Delrin~~ acetal resin, ~~POM~~ polyoxymethylene, polyvinyl chloride, ~~Teflon~~ polytetrafluoroethylene, polyamide, polyacetal, polyethylene, polycarbonate, polystyrene, and polypropylene.

22. (Currently Amended) A device as claimed in claim 13, wherein the polymer material of which the sample chamber is made is selected from the group consisting of ~~Delrin~~ acetal resin, ~~POM~~ polyoxymethylene, polyvinyl chloride, ~~Teflon~~ polytetrafluoroethylene, polyamide, polyacetal, polyethylene, polycarbonate, polystyrene, and polypropylene.

23. (Currently Amended) A device as claimed in claim 14, wherein the polymer material of which the sample chamber is made is selected from the group consisting of ~~Delrin~~ acetal resin, ~~POM~~ polyoxymethylene, polyvinyl chloride, ~~Teflon~~ polytetrafluoroethylene, polyamide, polyacetal, polyethylene, polycarbonate, polystyrene, and polypropylene.

24. (Canceled)